

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

SOUTHCO, INC.	:	CIVIL ACTION
	:	
v.	:	
	:	
FIVETECH TECHNOLOGY INC.	:	NO. 10-1060

MEMORANDUM

McLaughlin, J.

January 24, 2012

The plaintiff in this case is a manufacturer of hardware, including "panel" or "captive" screws. The defendant is a competitor of Southco. Southco alleged patent infringement by Fivetech on three of its patents. Fivetech moved for partial summary judgment on all of the claims in one patent and fifteen claims in another. The Court will grant Fivetech's motion.

I. Procedural History

Southco alleges that Fivetech infringed on its patents and trademarks through the sale of Fivetech Series 46 captive fasteners ("series 46 screws"). Specifically, Southco alleges infringement on its patent number 5,851,095 ("the '095 patent") issued on December 22, 1998; on its patent number 6,280,131 ("the '131 patent") issued on August 28, 2001; on its patent number 6,468,012 ("the '012 patent") issued on October 22, 2002; and on its trademark registrations numbers 2,478,685 and 3,678,153. Compl. ¶¶ 11-15 ('095 patent), 20-23 ('131 patent), 28-31 ('012 patent), 36-44 (trademark).

The current motion for partial summary judgment concerns only on the '095 patent and the '131 patent. Fivetech argues that its series 46 screws do not violate the first fifteen claims of Southco's '095 patent or any of the fifteen claims of Southco's '131 patent. The Court held an oral argument on this motion on October 20, 2011.

## II. Summary Judgment Record

A captive screw, or captive fastener, is a device which holds a screw in place while the screw is used to connect two panels. A cylindrical ferrule holds the screw<sup>1</sup> and a knob can be placed over the screw head. Pl. Resp. 2; Def. Br. 2-4. The question in this suit is the scope of the claims language of Southco's captive screw patents. The parties do not dispute the construction of the accused Fivetech device.

The language of Claims 1, 4, 7, 10, and 13 of the Southco '095 patent, with emphasis added to the disputed portions, is:

a hollow ferrule having a first end and a second end through which the threaded shaft slides, the ferrule having a panel attachment means at the first end to secure the captive screw to the panel, and a threaded shaft captivation means, said threaded shaft captivation means adjacent the second end, wherein the second end of the ferrule is slidably and rotatably attached to the knob such that when the threaded shaft is in a retracted position, the threaded shaft captivation means prevents the ferrule and the knob

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<sup>1</sup> Screws are also called "threaded shafts."

from separating and when the threaded shaft is in an extended position, the flat, annular bottom surface of the head portion of the screw is in contact with the second end of the ferrule.

Def. Br., Ex. A.

The relevant language in the Southco '131 patent is slightly different. Claim 1 says:

. . . . a screw captivation means adjacent said second end of said ferrule, said second end of said ferrule being slidably and rotatably engaged with said knob wherein said screw captivation means prevents said ferrule and said knob from disengaging when said threaded shaft is in a retracted position and said head of said screw is in contact with said second end of said ferrule when said is in an extended position.

Def. Br., Ex. B.

Claims 9 and 14 of the '131 patent use this language:

a hollow ferrule having a first end and a second end through which the screw slides, the ferrule having a panel attachment means at the first end to secure the captive screw to the panel and a screw captivation means, said screw captivation means adjacent the second end, where in the second end of the ferrule is slidably and rotatably attached to the knob.

Id.<sup>2</sup>

Claim 12 of the '131 patent provides only a description of the function, and not the structure, of the device. The relevant part of the claim reads:

d) a hollow ferrule having a first end and a second end through which the threaded shaft slides, the ferrule having a panel attachment means at the first end to secure the captive screw to the panel and a threaded shaft captivation means, said threaded shaft captivation means adjacent the second end.

Id.

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<sup>2</sup> Claim 14 uses "threaded shaft" in place of "screw."

In the Fivetech device, the screw is captured using a washer which connects to the ferrule. The screw head is attached to the knob. The knob and ferrule are not attached to one another, although they are prevented from separating by the joinder of the screw to the knob. See Pl. Resp. 14-15; Def. Br., Ex. G.

### III. Analysis<sup>3</sup>

In a patent infringement case, the court proceeds in two steps. Markman v. Westview Instruments, Inc., 517 U.S. 370, 384-85 (1996). In the first step, the court must construe the claims in the patent. Because a patent is a legal instrument, this is a question of law.<sup>4</sup> The second step requires determining

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<sup>3</sup> A party is entitled to summary judgment if there "is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The moving party bears the initial burden of demonstrating the absence of any genuine issue of material fact, which may be satisfied by demonstrating the party who bears the burden of proof lacks evidence to support his case. Celotex Corp. v. Catrett, 477 U.S. 317, 323 (1986). In making its determination, the court must consider the evidence in a light most favorable to the nonmoving party. Del. Valley Floral Grp., Inc. v. Shaw Rose Nets, LLC, 597 F.3d 1374, 1378-79 (Fed. Cir. 2010). Once a properly supported motion for summary judgment is made, the burden of production then shifts to the nonmoving party, who must set forth specific facts showing that there is a genuine issue for trial. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 250 (1986).

<sup>4</sup> The Court held argument on this motion on October 20, 2011. Although no evidence was presented, Fivetech told the Court that it considered the argument a sufficient Markman hearing. Southco did not object. Tr. 10/20/11 at 96.

if the claims are infringed. Infringement is a question of fact to be decided by a jury. Id.

A. Construing a Patent Claim

In the first step of an infringement suit, the court must determine the scope and meaning of the asserted claims. Id. at 372-74; Searfoss v. Pioneer Consol. Corp., 374 F.3d 1142, 1148 (Fed. Cir. 2004). The focus of this inquiry is the specific language used in the claim section of the patent. Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP, 616 F.3d 1249, 1254 (Fed. Cir. 2010). The language of a claim is given the "ordinary and customary meaning" as understood by a person of ordinary skill in the art in question, unless the patentee defined a term differently. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc); Searfoss, 374 F.3d at 1149. A person of ordinary skill is deemed to read the claim term "in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313 (quoting Multiform Desiccants, Inc. v Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998)).

Claims should be interpreted to give effect to all terms. A claim assertion should not be adopted which makes characteristics of the claim superfluous. Becton, 616 F.3d at 1257. Claims should be read in the context of surrounding words and as part of a "fully integrated written instrument." Phillips, 415 F.3d at 1314-15. Claims "must be read in view of

the specification . . . [which are] always highly relevant to the claim construction analysis.” Id. at 1315. The Federal Circuit has cautioned, however, that courts should not “import into a claim limitations that are not part of the claim” which appear only in the patent’s written description. Superguide Corp. v. DirecTV Enters., 358 F.3d 870, 875 (Fed. Cir. 2004).

Extrinsic evidence, such as dictionaries, treaties, expert testimony, and inventor testimony, can also be considered in construing a claim, but is less significant than the patent itself. Phillips, 415 F.3d at 1317. Extrinsic evidence cannot be relied upon to “vary or contradict the clear meaning of terms in the claims.” Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed. Cir. 2003).

#### B. Construing These Claims

The primarily disputed term in the ‘095 patent and ‘131 patent claims is the word “attached.” The full phrase in most of the claim language is “the ferrule is slidably and rotatably attached to the knob.”<sup>5</sup> The patents do not define the term and

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<sup>5</sup> The parties agree that because these descriptions provide the structure that performs the recited function, the Court does not need to analyze these claims under the 35 U.S.C. § 112 ¶ 6 “means-plus-function” formula. The parties agree that claim 12 is analyzed slightly differently than the other claims, as a “means-plus-function” claim under 35 U.S.C. § 112 ¶ 6. Under this provision, a court must identify structure corresponding to the function described. Lockheed Martin Corp. v. Space Systems/Loral Inc., 324 F.3d 1308, 1319 (Fed. Cir. 2003). The structure associated with the function, “a threaded shaft

neither party suggests that those of ordinary skill in the art in question understand the term any differently than its common meaning. The clear import of the patents' claims is that the ferrule and knob are directly connected to one another. This is the means by which the screw in the Southco patents is held in place.

Southco argues that as used in its claims, "attached" does not necessarily require direct contact between the ferrule and the knob. Instead, Southco argues that "attached" covers devices, such as the Fivetech screw, in which the ferrule is ultimately prevented from separating from the screw and knob; in other words, the claim covers devices where the ferrule and knob are indirectly attached.

Southco cites several cases in support of its interpretation of the word "attached." In Am. Seating Co. v. USSC Group, Inc., 91 F. App'x 669, 672 (Fed. Cir. 2004), in a non-precedential opinion, the Federal Circuit held that "attached to said vehicle" included attachments to "any structure that is . . . permanently part or permanently affixed to the vehicle." In Ex Parte Johann, the Board of Patent Appeals held that "attached to" does not require direct attachment of the two objects described to one another. Instead, "attached to" includes

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"captivation means" described in claim 12 is the same structure described in the other claims at issue here and therefore the Court will construe them in the same way.

fastening, securing or joining, either directly or indirectly, those objects. See Baronian Decl., Ex. F, Ex Parte Johann, Appeal No. 2008-5689, at 10 (Bd. Patent App. Apr. 30, 2009). In Ex Parte Bhattacharya, the Board held that for the purpose of granting a patent, a claim which did not use the phrase "directly attached" would not be presumed to have intended that the two objects were directly attached. Id., Ex. G, Ex Parte Bhattacharya, Appeal No. 2008-2294, at 4 (Bd. Patent App. July 14, 2008). In Royal Typewriter, Judge Learned Hand wrote that "we speak of two objects as 'attached' to each other, though they are connected by a train of links or event by a chain." Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 693 (2d Cir. 1948).

In other cases, courts construe "attached" to mean directly connected. In Jurgens v. McKasy, the Federal Circuit held that the word "attached" in the claims limitation at issue required a "direct series connection" between the two described parts. 927 F.2d 1552, 1560-61 (Fed. Cir. 1991). The court noted that neither the claims, embodiment, or patent prosecution history suggested an alternate reading. Id. In Searfoss, the Federal Circuit held that as used in a claim, "connecting" requires a "direct connection[]" between the two objects because "connecting" is synonymous with "attaching." Searfoss, 374 F.3d at 1150. See also Affymetrix Inc. v. Hyseq, Inc., 132 F. Supp. 2d



1212, 1221 (N.D. Cal. 2001) (rejecting argument that "covalently attached" means "indirectly" attached because that reading was contrary to the plain language of the claim and not supported by intrinsic evidence).

Notably, the courts in all of these cases considered the word "attached" in the context of the specific patents, reading the word in the context of the patent claims and other intrinsic evidence.

The language of the Southco patent claims, that "the ferrule is slidably and rotatably attached to the knob," describes a captivation mechanism in which a screw is held in place by the connection between a knob and ferrule. It is clear from the plain language of the claim that the ferrule is attached by direct interaction with the knob. This reading gains strength when the patents' preferred embodiment language, diagrams included in the patent, and prosecution history are considered. Both the preferred embodiment and diagrams in the patents unambiguously describe a capture mechanism in which the knob and ferrule directly connect by opposing flanges, or edges, which prevent the two parts from separating.<sup>6</sup> Neither the prosecution

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<sup>6</sup> The relevant language from the Preferred Embodiments in both patents, referring to the numbering in the patent diagram says, specifically describes the connection between the knob and ferrule: "the knob 30 is attached to the ferrule 50 . . . . The limited axial movement is accomplished by a first annular flange 35 on the knob 50 extending inwards from the inner surface 38 of the hollow knob 30 towards the threaded shaft 22, in combination

history nor any other intrinsic evidence supports Southco's interpretation that the patents include an "indirect" attachment between knob and ferrule.<sup>7</sup>

Southco's reading would cover any captive screw in which a knob and ferrule are linked by any means, including one or more additional parts of a capture device. This reads out of the patent the way in which the Southco claimed invention actually captures the screw: using a direct connection between the knob and ferrule. Such a reading makes superfluous the description of the knob and flanges in the Southco patents and the Court declines to construe the claims against their clear language and the preferred embodiment described in the patent.

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with a second annular flange 56, integral to the ferrule 50, extending outward from the body of the ferrule 50 at the knob end or first end of the ferrule 50. . . . The first and second annular flanges 35 and 56 allow the knob 30 and the ferrule 55 to be a single, non-detachable assembly . . . ." '095 patent, Columns 4:62-5:15; '131 patent, Column 5:3-23 (emphasis omitted and added).

<sup>7</sup> Because the intrinsic evidence is sufficient to construe the claim, the Court does not need to consider extrinsic evidence. Southco provides an affidavit by Dr. Pratt, a professional engineer with a PhD in civil engineering. Pl. Resp., Ex. 1, Pratt Decl. ¶ 2. Pratt concludes that the knob of the Fivetech screw is attached to the ferrule "because the knob cannot be pulled apart from the ferrule." Id. ¶ 11. He examines a dictionary definition of "attached" and concludes that "'attached' as used in the claim must mean simply that the knob and ferrule are held together such that they cannot be separated." Id. ¶ 12-13. Even if that testimony were considered, however, Dr. Pratt does not provide evidence that those skilled in the relevant art would understand "attached" any differently than its ordinary meaning.

The Southco patent claims at issue are construed to cover a captive screw in which a threaded screw is captured by a connection between a knob and a ferrule.

C. Infringement

After the claim is properly construed, the next question is a factual one: does the accused device infringe on the properly construed patent claims?<sup>8</sup> There are two types of infringement: literal infringement and infringement under the doctrine of equivalents. Fivetech argues that there is no genuine issue of material fact on the question of infringement.

1. Literal Infringement

Literal infringement requires that every limitation of the patent claim be found exactly the same in the accused product. There is no literal infringement if any claim limitation in the patent is missing from the accused device. Becton, 616 F.3d at 1253. "There can be no literal infringement where a claim requires two separate structures and one such structure is missing from an accused device." Id. at 1255-56.

The Southco patents require that a screw is held in place because of an attachment between the knob and ferrule. In the Fivetech series 46 fastener, the screw is held into place by

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<sup>8</sup> Claim 12 of the '131 patent, because it is analyzed under a means-plus-function rubric, is addressed slightly differently in the infringement analysis.

a ferrule attached to a washer; the knob in the accused Fivotech device plays no role in capturing the screw. Therefore the series 46 screw does not meet every limitation of the Southco claims. The Court concludes that no reasonable jury could find that every limitation of the patent claim exists in the Fivotech screw.

Southco's argument to the contrary relies not on an examination of the Fivotech device, but on Fivotech's 2008 patent application for the series 46 screw. In the abstract of the application, Fivotech describes the series 46 screw as containing "a knob, mounted on to the force exerted portion of the locking unit [a spring] and movably coupled with the ferrule." Pl. Resp., Pratt Decl., Ex. I (emphasis added). The description, in so far as "coupled" is even synonymous with "attached," does not address the way in which the knob and ferrule are ultimately joined in the device. Indeed, in the Fivotech patent, other descriptions of the series 46 screw show that the knob and ferrule are not connected to one another. This description in the Fivotech patent is not sufficient to create a genuine issue of material fact on whether the Fivotech device reaches all of the claims of the Southco patents.

## 2. Infringement Under the Doctrine of Equivalents

If there is no literal infringement, there still may be infringement under the doctrine of equivalents. This is an

equitable doctrine designed to prevent fraud on a patent. When "the accused device contains an 'insubstantial' change from the claimed invention" or "the element of the accused device performs substantially the same function in substantially the same way to obtain the same result" the accused device is equivalent to the claimed one and infringes upon it. TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1376 (Fed. Cir. 2008). The central question under the doctrine of equivalents "is whether the accused device operates in the 'same way' as the claimed invention." Searfoss v. Pioneer Consol. Corp., 374 F.3d 1142, 1150-51 (Fed. Cir. 2004).

The doctrine is important for protecting the claims of patent owners. It also, however, can expand a patent beyond the plain language of the claim. Therefore, "[i]t is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety." Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997). Under this "all elements" or "all limitations" rule, the doctrine of equivalents is limited: "[T]here can be no infringement under the doctrine of equivalents if even one limitation of a claim or its equivalent is not present in the accused device." Lockheed Martin Corp. v. Space Systems/Loral, Inc., 324 F.3d 1308, 1321 (Fed. Cir. 2003). The all elements rule is a legal limitation

which is determined by the court. Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314, 1323 (Fed. Cir. 2009).

In determining equivalency, one factor to consider is the known interchangeability of the means used in the patent with the means used in the accused device. Warner-Jenkinson Co., 520 U.S. at 37. Known interchangeability, however, is not dispositive of equivalence. Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., 145 F.3d 1303, 1309 (1998). Rather, the question is whether the patentee is provided a fair scope of protection for his patent. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2003).

The existing technology is also relevant as a limitation on the doctrine of equivalents. "[I]t is well settled law that a patentee cannot assert a range of equivalents that encompasses the prior art." Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1380 (Fed. Cir. 2001). This is because "a patentee should not be able to obtain, under the doctrine of equivalents, coverage which he could not lawfully have obtained" by a literal claim. Wilson Sporting Goods v. David Geoffrey & Assoc., 904 F.2d 677, 684 (Fed. Cir. 1990).

The Court finds that the "all elements" test is not met in this case. The Southco patents require that the ferrule and the knob be attached in order for the screw to be held in place. If the knob were broken on the Southco device described in the

patents, the screw would not be held in the ferrule. By contrast, if the knob was broken from the series 46 screws, the screw would still be held in place in the ferrule. If the Court were to adopt Southco's interpretation of the patents to cover the Fivetech screws, the parts of the claim which even describe the knob would be written out of the claim entirely. The Fivetech device uses a washer, which is entirely absent from the Southco patents. This additional piece of equipment is not an insubstantial change to the Southco patents. The Fivetech series 46 screw does not perform the capture of the screw in substantially the same way as described in the Southco patents. Therefore, there is no infringement under the doctrine of equivalents.

### 3. Infringement of Claim 12 of the '131 Patent

Claim 12 of the '131 patent is analyzed under the "means-plus-function" formula in 35 U.S.C. § 112 ¶ 6. Literal infringement under § 112 ¶ 6 "requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification." Lockheed, 324 F.3d at 1320. This test is closely related to the doctrine of equivalents analysis, because both look to the similarity of function of the structures at issue. Chiuminatta, 145 F.3d at 1310.

For the reasons described above, claim 12 is not infringed because the function described in claim 12 of the '131 patent keeps the screw captured in a different way than in the series 46 screws.

An appropriate order shall issue.